

1/12

# XML Protocol Schema

```
<xsd:schema xmlns:xsd="http://www.w3.org/2000/08/XMLSchema">
  <xsd:annotation>
    <xsd:documentation>
      Microsoft schema for Synchronization protocol
      Copyright 2000 Microsoft, All rights reserved
    </xsd:documentation>
  </xsd:annotation>
```

**FIG. 1A**

```
  <xsd:element      name="Sync" type="SyncType" />

  <xsd:complexType name="SyncType" >
    <xsd:sequence>
      <xsd:element name="Version" type="xsd:decimal" />
      <xsd:element name="Status" type="xsd:positiveInteger" />
      <xsd:element name="Collections" type="CollectionsType" />
    </xsd:sequence>
  </xsd:complexType>

  <xsd:complexType name="CollectionsType" >
    <xsd:element name="Collection" type="CollectionType"
      maxoccurs="unbounded"/>
  </xsd:complexType>

  <xsd:complexType name="CollectionType" >
    <xsd:element name="Class" type="xsd:string" />
    <xsd:element name="SyncKey" type="xsd:positiveInteger" />
    <xsd:element name="CollectionId" type="xsd:positiveInteger" minoccurs="0" />
    <xsd:element name="Options" type="xsd:CData" minoccurs="0" />
    <xsd:element name="Commands" type="CommandsType" minoccurs="0" />
    <xsd:element name="Responses" type="ResponsesType" minoccurs="0" />
    <xsd:element name="Status" type="xsd:positiveInteger" />
    <xsd:element name="GetChanges" type="xsd:positiveInteger" minoccurs="0" />
    <xsd:element name="WindowSize" type="xsd:positiveInteger" minoccurs="0" />
    <xsd:element name="MoreAvailable" type="xsd:positiveInteger" minoccurs="0" />
  </xsd:complexType>
```

2/12

```
<xsd:complexType name="CommandsType" >
  <xsd:element name="Add" type="CAddType" minoccurs="0"
maxoccurs="unbounded"/>
  <xsd:element name="Delete" type="CDeleteType" minoccurs="0"
maxoccurs="unbounded"/>
  <xsd:element name="Change" type="CChangeType" minoccurs="0"
maxoccurs="unbounded"/>
  <xsd:element name="Fetch" type="CFetchType" minoccurs="0"
maxoccurs="unbounded"/>
</xsd:complexType>
```

<!--Need different types for commands and responses since responses has status -->

```
<xsd:complexType name="ResponsesType" >
  <xsd:element name="Add" type="RAddType" minoccurs="0"
maxoccurs="unbounded"/>
  <xsd:element name="Delete" type="RDeleteType" minoccurs="0"
maxoccurs="unbounded"/>
  <xsd:element name="Change" type="RChangeType" minoccurs="0"
maxoccurs="unbounded"/>
  <xsd:element name="Fetch" type="RFetchType" minoccurs="0"
maxoccurs="unbounded"/>
</xsd:complexType>
```

<!--For commands -->

```
<xsd:complexType name="CAddType" >
  <xsd:element name="ClientId" type="xsd:positiveInteger" minoccurs="0"
  <xsd:element name="ServerId" type="xsd:positiveInteger" minoccurs="0"
  <xsd:element name="ApplicationData" type="xsd:CData" />
</xsd:complexType>
```

```
<xsd:complexType name="CDeleteType" >
  <xsd:element name="ServerId" type="xsd:positiveInteger" />
</xsd:complexType>
```

```
<xsd:complexType name="CChangeType" >
  <xsd:element name="ServerId" type="xsd:positiveInteger" />
  <xsd:element name="ApplicationData" type="xsd:CData" />
</xsd:complexType>
```

```
<xsd:complexType name="CFetchType" >
  <xsd:element name="ServerId" type="xsd:positiveInteger" />
</xsd:complexType>
```

**FIG. 1B**

3/12

<!--For responses -->

```
<xsd:complexType name="RAddType" >
  <xsd:element name="ClientId" type="xsd:positiveInteger" />
  <xsd:element name="ServerId" type="xsd:positiveInteger" />
  <xsd:element name="Status" type="xsd:positiveInteger" />
</xsd:complexType>
```

```
<xsd:complexType name="RDeleteType" >
  <xsd:element name="ServerId" type="xsd:positiveInteger" />
  <xsd:element name="Status" type="xsd:positiveInteger" />
</xsd:complexType>
```

```
<xsd:complexType name="RChangeType" >
  <xsd:element name="ServerId" type="xsd:positiveInteger" />
  <xsd:element name="Status" type="xsd:positiveInteger" />
</xsd:complexType>
```

```
<xsd:complexType name="RFetchType" >
  <xsd:element name="ServerId" type="xsd:positiveInteger" />
  <xsd:element name="Status" type="xsd:positiveInteger" />
  <xsd:element name="ApplicationData" type="xsd:CDATA" />
</xsd:complexType>
```

</xsd:schema>

**FIG. 1C**

4/12

## Update XML Document

```
<Sync xmlns="AirSync:" xmlns:c="POOMCONTACTS:">
  <Version>0.2</Version>
  <Collections>
    <Collection>
      <Class>Contacts</Class>
      <SyncKey>5432109876</SyncKey>
      <CollectionId>1</CollectionId>
      <WindowSize>3</WindowSize>
      <GetChanges />
      <Options>
        <FilterType>1</FilterType>
        <Truncation>1024</Truncation>
      </Options>
      <Commands>
        <Add>
          <ClientId>0123456789</ClientId>
          <ApplicationData>
            <c:FirstName>Joe</c:FirstName>
            <c:categories>
              <c:category>Buddies</c:category>
            </c:categories>
          </ApplicationData>
        </Add>
        <Delete>
          <ServerId>9876543210</ServerId>
        </Delete>
      </Commands>
    </Collection>
  </Collections>
</Sync>
```

**FIG. 2A**

5/12

```
<Change>
  <ServerId>0123456789</ServerId>
  <ApplicationData>
    <c:MiddleName>Moe</c:MiddleName>
    <c:categories>
      <c:category>Buddies</c:category>
    </c:categories>
    <c:LastName>Schmoe The Man</c:LastName>
    <c:CompanyName />
  </ApplicationData>
</Change>
<Fetch>
  <ServerId>1122334455</ServerId>
</Fetch>
</Commands>
</Collection>
</Collections>
</Sync>
```

**FIG. 2B**

6/12

## Response XML Document

```
<Sync xmlns="AirSync:" xmlns:c="POOMCONTACTS:">
  <Version>0.2</Version>
  <Collections>
    <Collection>
      <Class>Contacts</Class>
      <SyncKey>5432109876</SyncKey>
      <CollectionId>1</CollectionId>
      <MoreAvailable />
      <Responses>
        <Change>
          <ServerId>0123456789</ServerId>
          <Status>4153602</Status>
        </Change>
        <Add>
          <ClientId>0123456789</ClientId>
          <ServerId>9876543210</ServerId>
          <Status>4153200</Status>
        </Add>
        <Delete>
          <ServerId>9876543210</ServerId>
          <Status>4153999</Status>
        </Delete>
        <Fetch>
          <ServerId>1122334455</ServerId>
          <Status>4153200</Status>
          <ApplicationData>*DATA*</ApplicationData>
        </Fetch>
      </Responses>
    </Collection>
  </Collections>
</Sync>
```

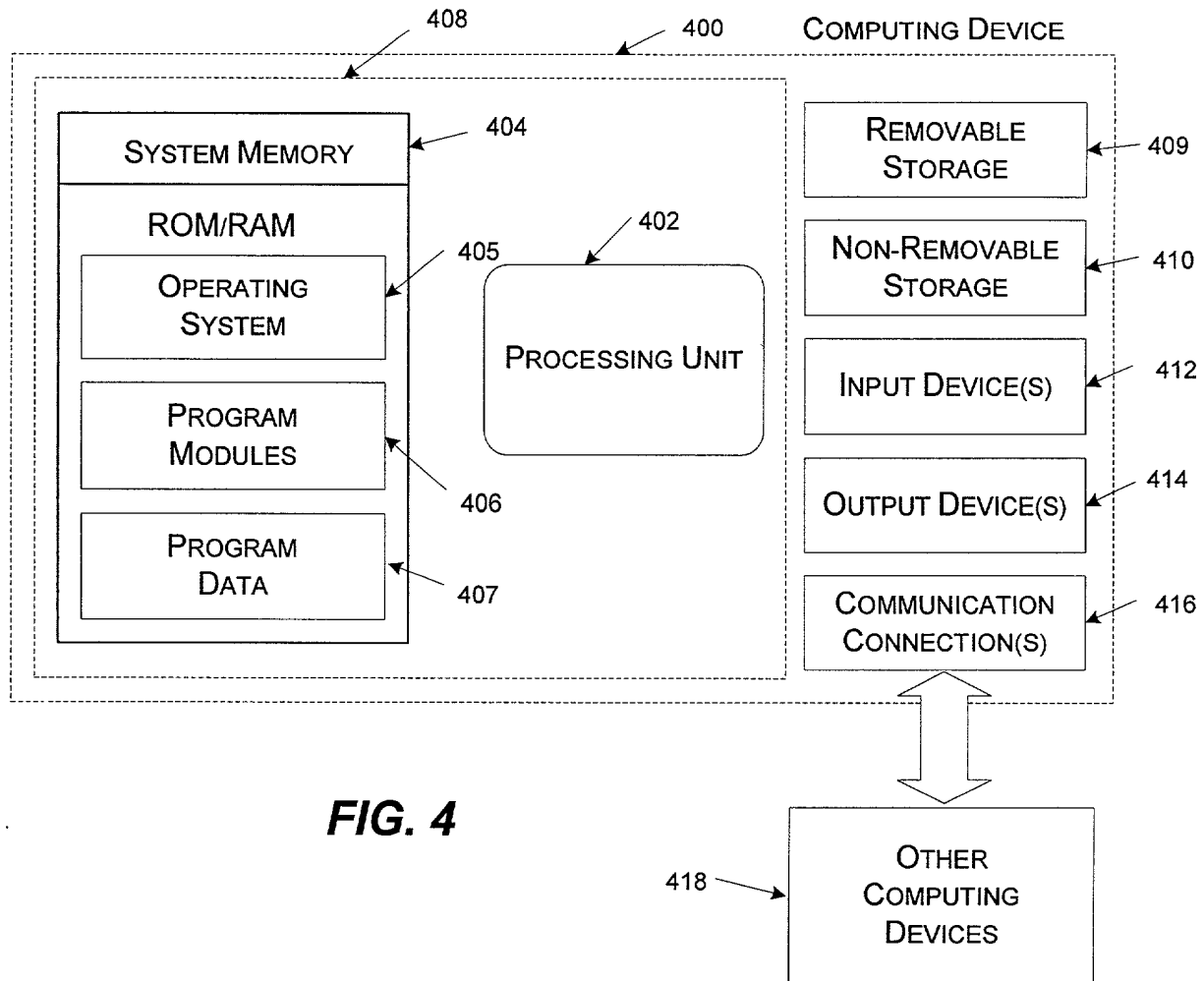
**FIG. 3A**

7/12

```
<Commands>
  <Add>
    <ServerId>2233445566</ServerId>
    <ApplicationData>
      <c:FirstName>Jeff</c:FirstName>
      <c:categories>
        <c:category>Buddies</c:category>
      </c:categories>
    </ApplicationData>
  </Add>
  <Delete>
    <ServerId>4455667788</ServerId>
  </Delete>
  <Change>
    <ServerId>5566778899</ServerId>
    <ApplicationData>
      <c:MiddleName>Henry</c:MiddleName>
      <c:categories>
        <c:category>Buddies</c:category>
      </c:categories>
      <c:LastName>Shoemaker</c:LastName>
      <c:CompanyName />
    </ApplicationData>
  </Change>
</Commands>
</Collection>
</Collections>
</Sync>
```

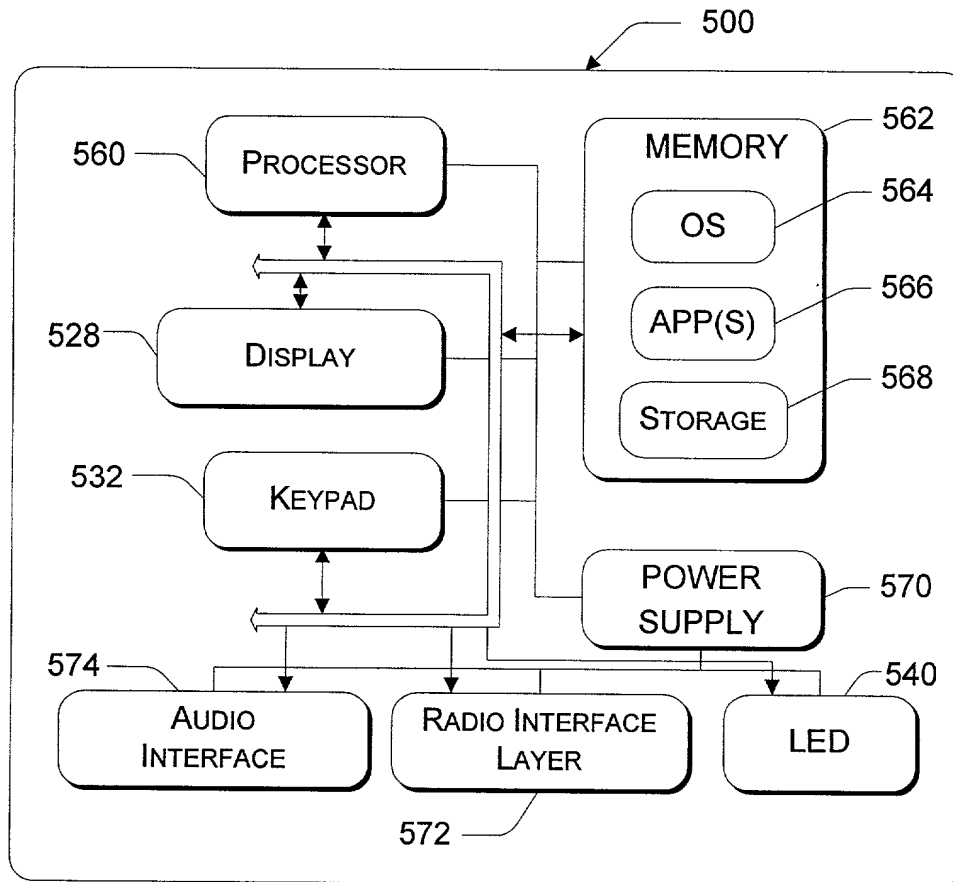
**FIG. 3B**

8/12



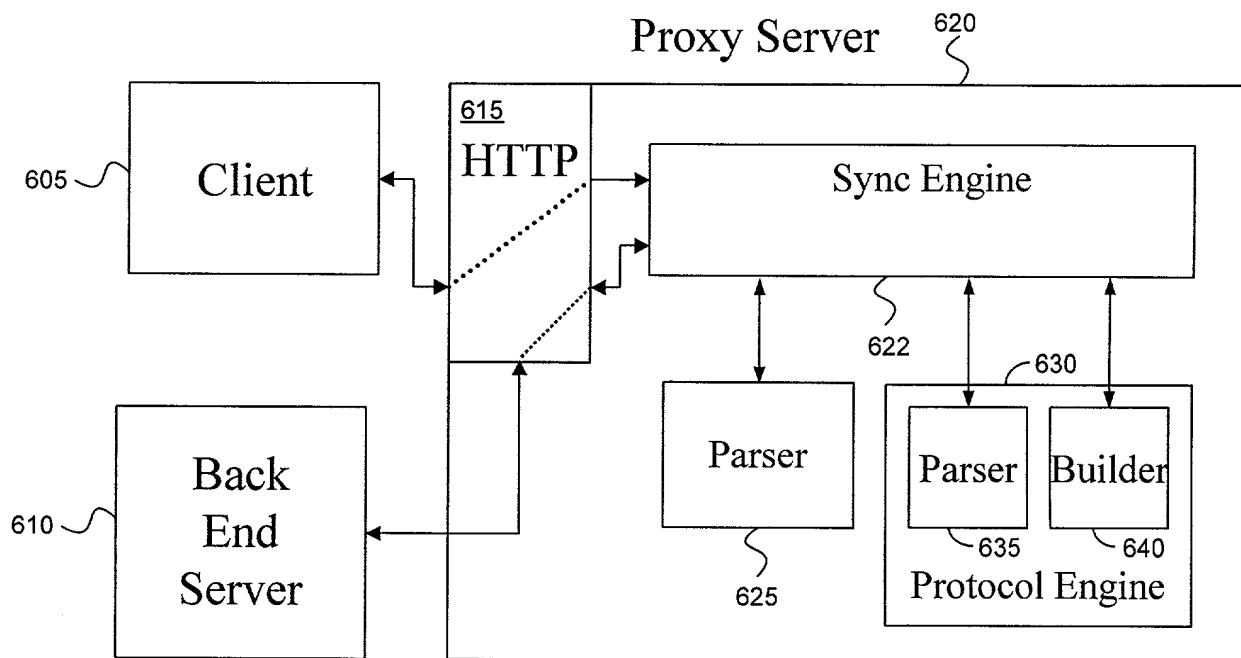


9/12



**FIG. 5**

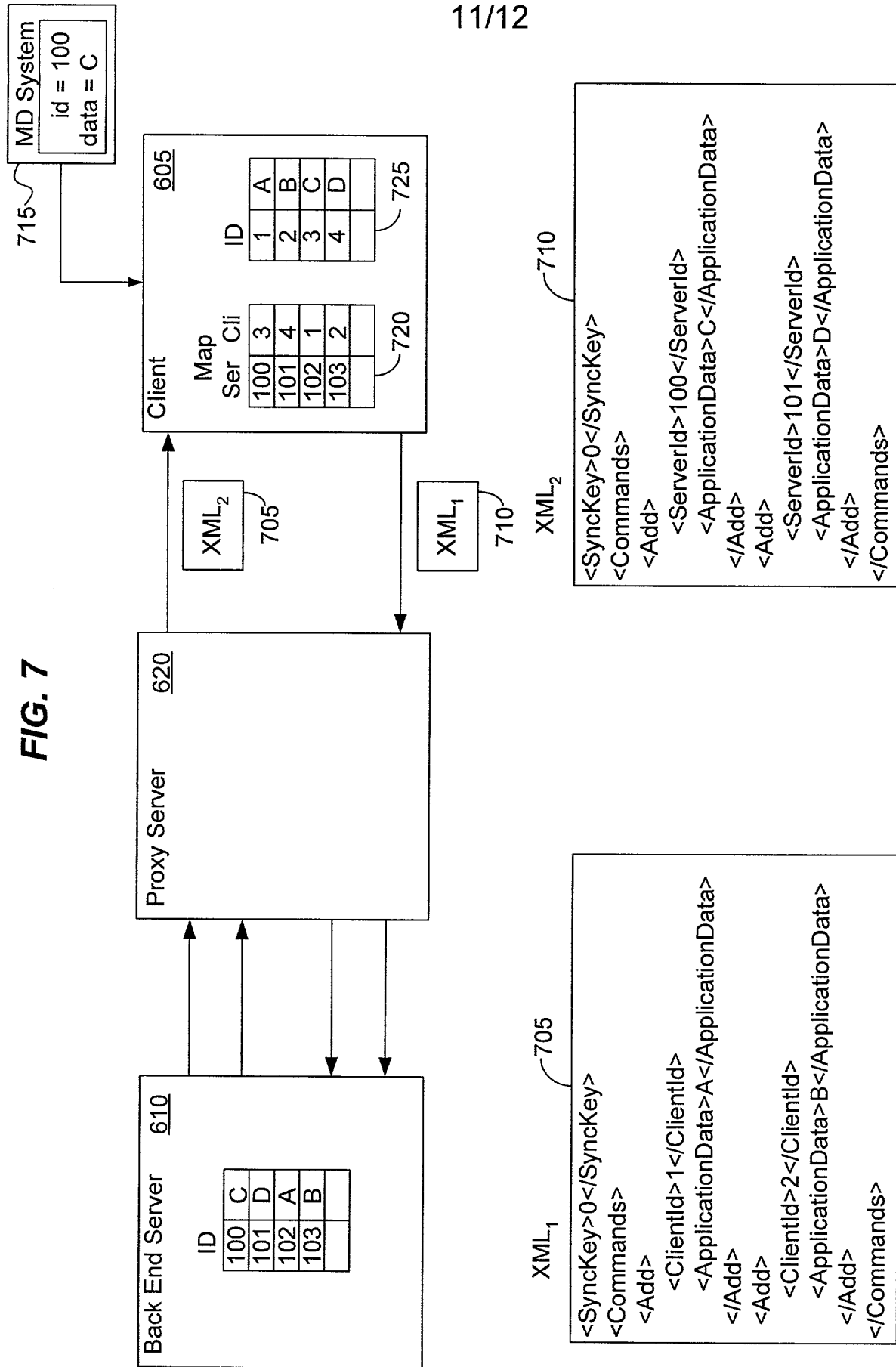
10/12



**FIG. 6**

11/12

FIG. 7



12/12

**FIG. 8**

